CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2008-0027

UPDATED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF ORDER NO. 91-160:

CLOVER FLAT LANDFILL, INC.
VISTA CORPORATION

CLOVER FLAT LANDFILL
CLASS III SOLID WASTE DISPOSAL FACILITY
CALISTOGA, NAPA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Water Board), finds that:

1. Clover Flat Landfill is operated by Clover Flat Landfill, Inc. (hereinafter called the Discharger) and owned by Vista Corporation (the Owner). Hereinafter, the Clover Flat Landfill is also called CFL or the landfill.

2. Clover Flat Landfill is a Class III municipal refuse disposal site located about three miles east of the city of Calistoga in northern Napa County (Figure 1). Access to the landfill is from the Silverado Trail.

3. Clover Flat Landfill began accepting waste in 1963 and serves communities within the northwestern portion of Napa County (Napa County Waste Zone 3). The landfill accepts nonhazardous solid waste and inert waste. No hazardous wastes, liquid wastes, infectious wastes, or sewage sludge are accepted at the site.

PURPOSE OF ORDER

4. The purpose of this Order is to 1) update waste discharge requirements (WDRs) to reflect the construction of additional landfill cells, a new landfill gas extraction system, and changes to the groundwater and surface water monitoring programs since WDRs were last updated in 1991; 2) specify liner construction requirements for future landfill cell construction consistent with the requirements of Title 27, Division 2, Subdivision 1 of the California Code of Regulations (Title 27) and the provisions of Title 40 Part 258 of the Code of Federal Regulations (Subtitle D), and State Water Resources Control Board (State Board) Resolution No. 93-62; 3) specify monitoring, control, and collection requirements for groundwater, leachate, landfill gas, and storm water consistent with Title 27, and 4) rescind previous Water Board Order No. 91-160.

5. This Order does not authorize the filling of wetlands or waters of the State. Such activities require certification of water quality impacts by the Water Board or the Executive Officer

pursuant to Section 401 of the Clean Water Act. Such activities may also require amendment or update of WDRs contained in this Order for the proposed fill area.

SITE DESCRIPTION AND LOCATION

6. Clover Flat Landfill is located in mountains that form the northeastern boundary of Napa Valley. The landfill lies in a steep canyon formed by an unnamed creek (Figure 2).

7. The landfill's permitted refuse area occupies 44 acres of a 78-acre landfill site on a 180-acre parcel. The developed disposal area currently occupies approximately 36 acres. About 3 acres of the landfill are closed under final cover.

8. As a canyon-fill operation, cells are constructed in phases as fill capacity is reached in previously constructed cells until the final "build-out" of the entire landfill configuration is reached. The final landfill elevation will be 1,000 feet above MSL. Based on the site development plan, the landfill has a permitted site capacity of about 5.1 million cubic yards. As of September 2007, approximately 1,150,000 cubic yards of waste have been deposited at the landfill. Under current fill plans, the landfill is expected to reach final capacity in 15 to 25 years.

9. The parcel on which the landfill sits is zoned as "Agricultural/Watershed." Other properties within one mile of the landfill are designated for use as "Agriculture, Watershed and Open Space" and "Agricultural Resource" by the Napa County Conservation, Development, and Planning Department.

REGULATORY HISTORY

10. Clover Flat Landfill currently operates under the following permits:
    (a) Solid Waste Facility Permit (SWFP) No. 28-AA-0002, issued by the California Integrated Waste Management Board (CIWMB) on April 3, 2001.

    (b) Waste Discharge Requirements (WDR) Order No. 91-160, adopted by the Water Board in November 1991. The landfill also operates under the general WDR Order No. 93-113, which was adopted by the Water Board in September 1993 to require landfills to comply with revised federal landfill standards ("Subtitle D" regulations).

    (c) Use Permit #U-438889, adopted by Napa County Department of Conservation, Development and Planning on June 20, 1990, and modifications 94333-MOD (January 17, 1996) and 99081 (February 2, 2000).

11. The Discharger submitted the "Master Development Report, Clover Flat Landfill" on November 15, 1988. The report contained a Report of Waste Discharge (ROWD) and a Report of Disposal Site Information (RDSI). The 1988 ROWD and RDSI were updated in 2005 with submission of a Joint Technical Document (JTD). The JTD was approved by the Local Enforcement Agency (Napa County) in 2006. The JTD proposed construction and operation details for the landfill in accordance with state regulations.

12. The Discharger submitted to the Water Board a preliminary closure and post-closure maintenance plan dated October 1990. The closure and post-closure maintenance plan describes the methods and controls to be used to assure protection of the quality of surface and ground waters of the area during final operations and subsequent use of the land. The plan includes: (1) an estimate of closure and post-closure maintenance costs; (2) a proposal for a trust fund or equivalent financial arrangement to finance the closure and post-closure; and (3) the amount to be deposited in the trust fund or equivalent financial arrangement each year.

13. The last lateral expansion of the CFL was approved in 1990. The County of Napa, as lead agency, certified the Final Environmental Impact Report (EIR) for the landfill expansion on June 5, 1990. The EIR identified adverse water quality impacts for which mitigation measures were necessary.

14. Since WDRs were last updated in 1991, the Discharger has submitted the following documents:
    (a) "Storm Water Pollution Prevention Plan (Revision 1)," dated December 1992;
    (b) "Report of Waste Discharge," dated November, 1994;
    (c) "Amendment to Report of Disposal Site Information," dated February 1996;
    (d) "Preliminary Closure and Post Closure Maintenance Plan," dated October 1996;
    (e) "Report of Disposal Site Information Revision 2," dated July 2000;
    (f) "Storm Water Pollution Prevention Plan (Revision 2)," dated December 2001;
    (g) "Joint Technical Document, Clover Flat Landfill," dated December 2005; and
    (h) "Revised Financial Assurance Cost Estimate for Corrective Actions," dated July 28, 2006.

15. In 2000, CFL applied for an operational expansion in the form of increased daily tonnage. Napa County approved an increase in the daily tonnage from a maximum of 300 tons per day to 600 tons per day.

WASTES AND THEIR CLASSIFICATION

16. The landfill was designed to receive nonhazardous solid waste as classified in CCR Title 27, Section 20220 (a) from residential, commercial, and industrial sources. Nonhazardous solid waste includes but is not limited to putresible and nonputresible solid, semi-solid, and liquid wastes including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, and soil. Wastes accepted at CFL include residential garbage and rubbish, commercial and nonhazardous industrial refuse, demolition and construction waste, brush and stumps, tires, and street refuse. A significant percentage of the waste accepted at CFL consists of waste material from the grape and wine production industry.

17. No hazardous wastes, liquid wastes, infectious wastes can be accepted at the landfill. Sewage sludge has not been accepted at CFL in the past; however, this Order allows CFL to accept dewatered sewage sludge from the Calistoga Wastewater Treatment Plant. Only sludge with less than 50 percent liquids can be accepted.

18. This Order allows the landfill to periodically receive small quantities of nonfriable asbestos (e.g., shingles and molded pipe) as nonhazardous waste. Such materials, when received, are handled so that their nonfriable integrity is maintained. Asbestos items that appear to be friable are rejected as hazardous. According to Article 11, Title 22, California Administrative Code, "Asbestos is only considered hazardous when it is in a friable form. Friable translates as crumbly or easily reduced to a powdered form." The California Department of Public Health does not consider asbestos shingles to be friable and, therefore, not a hazardous waste. For this reason, asbestos shingles do not need to be manifested as a hazardous waste.

SURFACE HYDROLOGY

19. The natural site topography of the area varies from moderate to steep, with elevations ranging from about 600 feet above Mean Sea Level (MSL) along the south side of the landfill site to nearly 950 feet above MSL along the north boundary. Currently, the top surface elevation of the landfill is 820 feet MSL.

20. The landfill lies in a steep northwest-to-southeast trending canyon and is surrounded by rugged, undeveloped hills of volcanic origin. The canyon is drained by an unnamed, ephemeral creek that drains into the Napa River. Surface water occurs within the site boundary as an improved spring located upgradient of the landfill and used for nonpotable domestic use. Runoff from the landfill site is routed around the active filling area by ditches that direct the runoff to a sedimentation pond. Overflow from the sedimentation pond drains to the southeast where it enters an unnamed ephemeral stream at the toe of the landfill, which ultimately discharges to the Napa Valley floor.

21. The mean annual precipitation at the landfill site is about 36.5 inches. The 100-year, 24-hourstorm event is estimated to be 9.7 inches and the probable maximum precipitation, 71.2 inches. The mean annual evaporation is estimated to be 46.93 inches.

GEOLOGICAL SETTING

22. CFL is located in rugged hills that form the northeastern boundary of the Upper Napa Valley. Rocks in this region consist of a thick sequence of volcanic, sedimentary, metamorphic, and ultramafic rocks that are exposed in the hills surrounding the valley. Bedrock in the area adjacent to the landfill consists of predominantly Pliocene-age Sonoma Volcanics with minor amounts of Cretaceous-age sedimentary and metamorphic rocks of the Franciscan Formation. Typically, valleys developed within this terrain contain a thin cover of Quaternary alluvium consisting of unconsolidated and poorly sorted deposits of gravel, sand, silt, and clay. These alluvial deposits are generally lenticular and poorly bedded. Individual lenses are usually less then 10 feet thick but may extend laterally over large areas.

23. The landfill is underlain by a complex series of inter-layered volcanic rock types covered by a thin soil mantle. The volcanic rocks identified at the landfill site are referred to as the Sonoma Volcanics of Pliocene age. The Sonoma Volcanic series is comprised predominantly of rhyolite lava flows and rhyolitic ash deposits (tuff) with relatively minor

amounts of interbedded siliceous rocks, claystone, and siltstone. In the Calistoga area, some of the volcanic rock bodies have been hydrothermally altered to dense, hard, fine-grained rocks consisting primarily of quartz and kaolinitic or montmorillonitic clays. Some of the volcanic rock units at the landfill site contain crystalline pyrite, which, when exposed through weathering, can lower the pH of water.

25. Rocks exposed at the vicinity of the landfill site are generally weathered volcanic rock. At depth, the site is underlain by fresh (i.e., unweathered) volcanic rock. Weathered bedrock at the site typically occurs at depths from 3 to 17 feet below the ground surface. The transition from relatively fresh to weathered bedrock coincides with a color change from light gray to dark yellowish brown, characteristic of weathered bedrock materials. Weathered bedrock is characterized by low to moderate hardness and generally is more permeable than unweathered bedrock.

26. The landfill is located in the seismically active coastal region of California. The entire region experiences moderate seismic activity as the result of movement along the regional San Andreas Fault System. Major known faults in the area are the San Andreas, Green Valley, Maacama, and Healdsburg-Rodgers Creek faults. The landfill lies about 33 miles east of the San Andreas fault, 30 miles northwest of the Green Valley fault, 8 miles southeast of the Maacama fault, and 12 miles northeast of the Healdsburg-Rodgers Creek fault.

HYDROGEOLOGY

27. Groundwater beneath the landfill site occurs primarily within the fractured bedrock of the Sonoma Volcanics. The depth to groundwater in fractured bedrock ranges from 84 to 145 feet below the ground surface. Groundwater is deeper on side slopes at higher elevations, and closer to the ground surface at lower elevations. Groundwater flows from higher elevations to lower elevations, generally following site topography. Thus, the groundwater table forms a subdued expression of the surface topography. Water elevation data obtained from site monitoring wells and springs indicates that groundwater beneath the landfill primarily flows from northwest to southeast.

28. Groundwater is also present seasonally (during the spring) within alluvial deposits within the channel of the ephemeral stream east of the landfill. Groundwater levels in the alluvium and bedrock fluctuate seasonally and are typically a few feet higher during the spring or during years of higher-than-normal precipitation.

29. Groundwater flow rates through the fractured bedrock appear to be highly variable. The fine-grained volcanic rock matrix generally has very low transmissivity, and most flow is presumed to occur through the fracture network. The interconnection of the fractures is poorly understood but is judged to be low on the basis of wide differences in static water levels in wells with similar ground-surface elevations. Also, bedrock monitoring wells at the site typically produce minor quantities of water and generally require a few days for water levels to recover after sampling. Groundwater flow velocities within the bedrock were determined using groundwater data collected from bedrock wells during the fourth quarter (November) 2004 and the first quarter (February) 2005. The calculated Darcy flow

velocities ranged from 0.35 to 319 feet per year in November 2004 and from 0.32 to 291 in February 2005.

30. Subsurface recharge and discharge from the landfill site is believed to be insignificant because of the low permeability and low storage potential of the underlying bedrock. Recharge at the site is primarily from precipitation. In general, discharge occurs as surface flow through the site from areas of higher elevation to areas of lower elevation.

FILL PLANS

31. Waste disposal in the landfill began in 1963. By 1993 the initial landfill reached its capacity. A lateral expansion of the landfill was approved in 1990. The landfill expansion is being constructed as Modules 1 to 7. Filling of Module 1, Phase A took place from 1993 to 1995. Module 1, Phase B was constructed in 1995 and received waste until it was filled in 1998. Module 2A was constructed in 1997 with refuse disposal completed in 2003. Modules 2B and 3 were constructed in 2002 and began receiving waste in 2003; Modules 2B and 3 remain the active disposal cells.

32. Future fill plans consist of construction of Modules 4, 5, 6, and 7. The build-out of these modules is anticipated to provide 14 to 25 years of operational capacity, based on a remaining refuse capacity of 2.6 million cubic yards as of September 30, 2005, as stated in the December 2005 JTD.

LANDFILL DESIGN, CONSTRUCTION, AND OPERATION

33. The original landfill consisted of a single disposal cell that ultimately occupied about 12 acres. Wastes were placed on an unlined cell floor constructed of compacted clay. This original disposal cell did not have any means of leachate collection until a leachate barrier was constructed at the landfill toe in 1987. This cell was used for waste disposal until Module 1 of the expanded landfill began receiving wastes in 1993.

34. A vertical and lateral expansion of the landfill began in 1993 and is being constructed in phases, beginning with Modules 1A, 1B, 2A, 2B and 3. Phases 1A, 1B, and 2A have been completed. Phase 2B and 3 are presently active. Details of the landfilling sequence are described below.

<u>Module 1 (Phase 1A)</u>

35. The Module 1 (Phase 1A) expansion was primarily a vertical expansion, and consisted of continued placement of refuse over previously placed refuse within the boundaries of the original permitted landfill area**.** The Phase 1A vertical expansion occurred during 1993 – 1995. Refuse fill was graded so that the Phase 1A surface had a minimum six percent downward slope towards the north. It was estimated that after settlement, the surface would decrease to a two percent minimum slope.

<u>Module 1 (Phase 1B)</u>

36. Module 1 (Phase 1B), constructed in 1995, was both a vertical and a lateral expansion beyond the limits to the Phase 1A disposal area. Phase 1B construction began with installation of a horizontal leachate barrier upon the finished grade of the Phase 1A disposal area. The barrier intercepts leachate originating from the Phase 1B vertical expansion overlying the Phase 1A area and conveys it to the leachate collection and removal system. The purpose of the leachate barrier, as required by WDR Order No. 91-160, is to minimize the potential for leachate to migrate to the unlined portion of the landfill. The leachate barrier approved by the Water Board consists of 18 inches of intermediate cover, which has been re-compacted to 90 percent relative density, overlain by a 12-inch drainage layer, which in turn is overlain by a 12-inch thick protective operations layer. The drainage layer consists of a 12-inch layer of drain rock with an overlying non-woven filter fabric.

37. The Phase 1B base liner system consists of the following components, from top to bottom:

    - 12-inch thick protective operations layer,
    - drainage layer consisting of a 12-inch thick drain rock (pea gravel) covered with non-woven filter fabric,
    - 60-mil thick high density polyethylene (HDPE) geomembrane,
    - geosynthetic clay liner (GCL) placed directly over prepared subgrade, and
    - 6-inch groundwater interceptor underdrain.

38. The Phase 1B side slope liner system is placed on cut slopes up to a maximum 1.5:1 (horizontal to vertical) slope ratio. The Phase 1B side slope liner system consists of earth fill that has been constructed over the exposed rock surface and recompacted to 90 percent relative density, and an overlying 80-mil thick HDPE geomembrane. The Phase 1B side slope liner system also includes localized groundwater interceptor underdrains. The underdrains consist of strip drains constructed on the side slopes from geonet placed between the HDPE and the earth fill.

39. The Phase 1A leachate barrier and Phase 1B liner system were constructed during the summer of 1995 and were completed in October 1995. No excavation of waste was necessary to install the Phase 1B liner system.

Module 2A (Phase 2A)

40. The Module 2A liner system was constructed during the summer of 1997. No excavation of waste was necessary to install the new liner system. A geonet was placed over the Module 1 landfill slope to provide a continuous leachate barrier.

41. The Phase 2A base liner system consists of the following components, from top to bottom:

    - 12-inch thick protective operations layer,
    - drainage layer consisting of a 12-inch thick drain rock (pea gravel) covered with non-woven filter fabric,
    - 60-mil thick high density polyethylene (HDPE) geomembrane,

- geosynthetic clay liner (GCL) placed directly over prepared subgrade, and
- 6-inch groundwater interceptor underdrain.

42. The Phase 2A 80-mil HDPE side slope liner system was placed on cut slopes with up to a maximum 1.5:1 (horizontal to vertical) slope ratio and the earth fill toe berm installed. The Phase 2A side slope liner system also includes localized groundwater interceptor underdrains. The underdrains consist of strip drains constructed on the side slopes from geonet placed underneath the HDPE.

43. Phase 2A was used for waste disposal between 1998 and 2003.

Module 2B and 3 (Phases 2B and 3)

44. The base liner system for Modules 2B and 3 was constructed during the summer of 2002. The Phase 2B and 3 base liner system consists of 80-mil HDPE side slope liner system placed on cut slopes with up to a maximum 1.5:1 (horizontal to vertical) slope ratio and the earth fill toe berm installed. The side slope liner system includes localized groundwater interceptor underdrains. No excavation of waste was necessary to install the new liner system.

Liner Requirements for Future Cells

45. The liner design requirements specified in this Order for future cells at CFL include elements that were not required in WDR Order No. 91-160. The new requirements include 1) the placement of 2 feet of compacted clay beneath 80-mil HDPE geomembrane on new disposal cell floors, and 2) installation of composite sideslope liners except where steep sidewall conditions (e.g., slopes steeper than 1.5:1) would render a composite liner unstable. The new liner requirements are detailed in Specification 17.

MONITORING, COLLECTION, AND CONTROL PROGRAMS

Groundwater

46. The groundwater monitoring network approved by Order No. 91-160 consisted of seven monitoring wells named B-2, B-3, B-4, B-5A, B-5B, B-11, and B-12 (Figure 2). These wells were designed to monitor the groundwater-bearing zones identified at the site: alluvium, weathered bedrock, and unweathered bedrock. Groundwater in bedrock is monitored upgradient of the site in wells B-2, B-3, and B-4. Bedrock groundwater is monitored downgradient of the site in wells B-5B, B-11, and B-12. Groundwater in the alluvium is monitored seasonally downgradient from the toe of the landfill in well B-5A. Alluvial groundwater cannot be monitored upgradient of the site due to the absence of upgradient alluvial materials.

47. Groundwater is monitored semi-annually for pH, EC, TDS, chloride, nitrate nitrogen, settleable solids, turbidity, and volatile organic compounds (EPA Method 8260). Results of groundwater monitoring since 1989 have shown that samples from downgradient wells B-11 and B-12 contain very low concentrations of certain volatile organic compounds (VOCs), indicating migration of landfill gas or leachate from the older, unlined portion of the landfill. Detections of these VOCs (most commonly acetone, benzene, and toluene) are routine in B-11 but sporadic in B-12. All detected VOC concentrations have been below drinking water standards, with the exception that benzene concentrations have occasionally exceeded the State of California's drinking water standard (1 part per billion).

Leachate

48. CFL has two leachate collection and recovery systems (LCRS). One LCRS is for the older, unlined portion of the landfill and the other LCRS is for the lined expansion area. Leachate is monitored and sampled at each LCRS.

49. Leachate control measures for the unlined portion of the landfill consist of a migration barrier at the landfill toe, a leachate collection sump (LCS), and a leachate extraction well, LEW-2. The landfill toe barrier was constructed in 1987 to control migration of leachate from the unlined fill area. The toe barrier is about 150 feet long and consists of a clay core at least ten-feet wide that is keyed two feet into bedrock along the entire length of the barrier. A geotextile-wrapped gravel drain runs along the inside (i.e., the refuse side) of the barrier. This gravel drain intercepts leachate at the landfill toe and conveys it to the LCS, which is located at a low point along the barrier and contains a riser and pump. The leachate extraction well (LEW-2) is located approximately 100 feet upslope of the toe barrier. LEW-2 replaced an older leachate extraction well (LEW-1) in July 1992.

50. Leachate control measures for the lined expansion area include a blanket-type LCRS located on the base of the expansion area. This horizontal barrier is designed to intercept and prevent downward migration of leachate into the underlying, unlined portion of the landfill. Leachate generated within the lined expansion area is collected with perforated HDPE pipes and a gravel blanket layer and drains to the Module 2 sump (M-2S). Leachate collected in the Module 2 sump (M-2S) then drains under gravity to LEW-2. A vertical riser installed in M-2S allows extraction of leachate if clogging prevents gravity-draining to LEW-2.

51. Leachate is monitored and sampled semiannually at LEW-2 and at the leachate collection sump (LCS). The amount of leachate extracted from LEW-2 and the LCS have been recorded since 1990. The amount of leachate produced at the existing landfill is generally small, and therefore the extraction system is operated infrequently (a few hours per week). Between March 29, 2004, and March 28, 2005, the average weekly leachate extraction volume for LEW-2 was 281 gallons per week; during this same time, the LCS yielded 3,967 gallons per week. Peak extraction typically occurs during the 1st quarter (January through March).

52. Leachate samples from LEW-2 typically show trace to low concentrations of VOCs such as toluene, naphthalene, acetone, and benzene, while samples from the LCS generally do not contain detectable VOC concentrations.

53. Leachate is contained onsite in two 10,000 gallon tanks. Leachate collected at LEW-2 is pumped into the site water truck and sprayed for dust control on the existing fill and on roads overlying lined areas. Leachate is not sprayed onto the active working face.

Storm Water and Surface Water

54. Chapter 40 of the Code of Federal Regulations (CFR), Parts 122, 123, and 124, require specific categories of industrial activities, including landfills, to obtain a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges. The State Board has issued a General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES Permit No. CAS00000l). The landfill is subject to the requirements of the State Board's General Permit and as such is required to (1) submit a Notice of Intent for coverage under the General Permit, (2) prepare and implement a monitoring program, and (3) submit an annual report.

55. To comply with the Storm Water General Permit, storm water is sampled twice yearly at three locations (SW-A, SW-B, and SW-C). Surface water samples are collected from surface water monitoring points upstream (SWU) and downstream (SWD) of the landfill.

Landfill Gas

56. The Gas Collection and Control System (GCCS) is regulated by the Bay Area Air Management District (BAAQMD). The GCCS consists of collection wells located in the landfill that are connected to a header pipeline network to transmit landfill gas under vacuum pressure to the landfill gas flare system. The landfill gas flare burns the gas to mitigate potential pollutant emissions.

BASIN PLAN AND RESOLUTIONS

57. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Board, U.S. EPA, and the Office of Administrative Law where required.

58. The Basin Plan provides that all groundwater is considered suitable, or potentially suitable, for municipal or domestic water supply (MUN) and that, in making any exceptions, the Water Board will consider the criteria referenced in Water Board Resolution No. 89-39, "Sources of Drinking Water," where:

    (a) The total dissolved solids exceed 3,000 mg/l (5,000 µS/cm, electrical conductivity), and it is not reasonably expected by the Water Board that the groundwater could supply a public water system, or

(b) There is contamination, either by natural processes or human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use using best management practices or best economically achievable treatment practices, or

(c) The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

BENEFICIAL USES OF SURFACE WATER AND GROUNDWATER

Groundwater

59. The site resides within the boundaries of the North Napa Valley Groundwater Basin, as defined in the Basin Plan. The existing and potential beneficial uses identified for groundwater in this basin, according to the Basin Plan, include:

a. Municipal and Domestic Supply (MUN)
b. Industrial Process Supply (PROC)
c. Industrial Service Supply (IND)
d. Agricultural Supply (AGR)

60. Based on the hydrogeologic characterization and water quality data for the site, groundwater underlying the site qualifies as a potential source of drinking water in accordance with Water Board Resolution No. 89-39. Therefore, all of the above current and potential beneficial uses apply to groundwater beneath the site. However, as groundwater at the site occurs within thin, low-yield alluvial sediments and weathered and fractured volcanic bedrock, the landfill is considered an unlikely site for future water supply wells.

Surface Water

61. Existing or potential beneficial uses identified for surface water in the North Napa Valley watershed, according to the Basin Plan, include:

a. Municipal and Domestic Supply (MUN)
b. Industrial Process Supply (PROC)
c. Industrial Service Supply (IND)
d. Agricultural Supply (AGR)
e. Water Contact Recreation (REC1)
f. Non-Water Contact Recreation (REC2)
g. Cold Fresh Water Habitat (COLD)
h. Wildlife Habitat (WILD)
i. Preservation of Rare and Endangered Species (RARE)
j. Fish Migration (MIGR)
k. Fish Spawning (SPWN)

CALIFORNIA ENVIRONMENTAL QUALITY ACT

62. The County of Napa has certified a final Environmental Impact Report in accordance with the California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et.

seq.). The proposed landfill and landfill activity, as approved by the County, could cause significant effects on water quality and may degrade the water quality unless appropriate mitigation measures are taken. Potential impacts to the water quality could occur as a result of:

- Earthquake damage or failure of leachate collection system;
- Slope instability or failure as a result of water saturation of embankments;
- Potential degradation of surface water quality as a result of increased sediment load and/or erosion;
- Potential groundwater contamination due to contact with leachate;
- Potential downstream impacts to aquatic biota from accidental discharge of contaminated water; and
- Alteration of existing surface and groundwater flow.

63. The preceding impacts are mitigated or avoided by a series of design measures to control erosion and assure containment of waste and leachate through the use of liners, leachate collection and removal systems, groundwater control and limits on the physical dimensions of the fill. The mitigation measures are described in the ROWD, the Napa County Land Use Permit, and by the Provisions of this WDR for the Clover Flat Landfill. It is intended that the findings, prohibition, specifications, and provisions of this Order be consistent with the certified final Environmental Impact Report.

64. Adoption of this Order relates to construction and operation of waste management units within a permitted waste disposal area and is thus categorically exempt from the provision of the California Environmental Quality Act pursuant to Section 15301, Title 14 of the California Code of Regulations.

NOTIFICATION AND PUBLIC MEETING

65. The Water Board has notified the Discharger and interested agencies and persons of its intent to update waste discharge requirements and has provided them with an opportunity to submit their written views and recommendations.

66. The Water Board in a public meeting heard and considered all comments pertaining to the proposed waste discharge requirements for the site.

IT IS HEREBY ORDERED pursuant to the authority in Division 7, Section 13263 of the California Water Code (CWC), Title 27, Division 2, Subdivision 1 of the California Code of Regulations (Title 27), and State Board Resolution No. 93-62 that the Discharger, its agents, successors, and assigns shall meet the applicable provisions contained in Title 27, Division 7 CWC, and State Board Resolution No. 93-62, and shall comply with the following:

A. PROHIBITIONS

1. Waste shall not be exposed at the surface of any waste unit.

2. Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.

3. Hazardous wastes and designated wastes, including treated wood waste, shall not be disposed in this landfill.

4. The discharge of wastes, which have the potential to reduce or impair the integrity of the containment structures or which, if commingled with other wastes in the unit could produce chemical reactions that create heat, pressure, fire, explosion, toxic by-products, or reaction products, is prohibited.

5. The relocation of wastes is prohibited without prior Water Board staff concurrence.

6. The relocation of wastes to or from any waste management unit shall not create a condition of pollution or nuisance as defined in Section 13050(l) and (m) of the California Water Code. Any relocated waste shall not be placed in or allowed to contact ponded water from any source whatsoever. Wastes shall not be relocated to any location where they can be discharged into waters of the State or of the United States.

7. Excavation within or reconfiguration of any existing waste management unit is prohibited without prior concurrence of Water Board staff. Minor excavation or reconfiguration activities such as for installation of signs or landscaping, or for routine maintenance and repair, do not require prior staff concurrence.

8. Wastes shall not be placed in any area of a new unit without Executive Officer approval based on receipt of an adequate construction quality assurance report(s) certified by a California-Registered Civil Engineer or California-Certified Engineering Geologist.

9. Construction of the containment features of all future waste management units must be in compliance with this Order, Title 27, and State Board Resolution No. 93-62.

10. The discharge or storage of hazardous waste, as defined in Sections 2521 and 2522 of Title 23, Article 2 of Chapter 15 and as defined in CCR Title 22, at the landfill is prohibited.

11. Groundwater quality shall not be degraded as a result of the waste disposal operation.

12. Filling of wetlands or waters of the State at the landfill without certification of water quality impacts associated with the proposed filling by the Water Board or Executive Officer pursuant to Section 401 of the Clean Water Act is prohibited.

13. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the site.

14. Buildup or mounding of leachate levels within the landfill is prohibited and shall be prevented by operation of a leachate extraction system. The depth of leachate shall not be greater than 12 inches above the bottom liner.

15. Leachate, or storm water or groundwater containing leachate or in contact with waste, shall not be discharged to waters of the State or of the United States unless specifically authorized under an NPDES permit.

16. The treatment, storage, or discharge of groundwater or leachate shall not create a condition of pollution or nuisance as defined in Section 13050(m) CWC, nor degrade the quality of waters of the State or of the United States.

17. The Discharger shall not cause the following conditions to exist in waters of the State or of the United States at any place outside the landfill boundary:

    a. Surface Waters:

        (1) Floating, suspended, or deposited macroscopic particulate matter or foam
        (2) Bottom deposits or aquatic growth
        (3) Adverse changes in temperature, turbidity, or apparent color beyond natural background levels
        (4) Visible, floating, suspended, or deposited oil or other products of petroleum origin
        (5) Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

    b. Groundwater:

        (1) Degradation of groundwater quality; or
        (2) Substantial worsening of existing groundwater impacts

18. Migration of pollutants through subsurface transport to waters of the State is prohibited.

B. SPECIFICATIONS

1. The Discharger shall implement any Self-Monitoring Program issued by the Executive Officer. The attached Self Monitoring Program (SMP) is hereinafter a part of this Order. The purpose of the SMP is to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Basin System, or any unreasonable impairment of beneficial uses associated with the Facility's past or present activities.

2. At any time, the Discharger may file a written request (including supporting documentation) with the Executive Officer, proposing modifications to the attached SMP. If the proposed modifications are acceptable, the Executive Officer may issue a letter of approval that incorporates the proposed revisions into the SMP.

3. The Discharger shall install any reasonable additional monitoring devices for groundwater, surface water, leachate, and landfill gas required to fulfill the terms of any future SMP issued by the Executive Officer for the landfill.

4. The Discharger shall maintain, inspect, repair, and replace all devices installed in accordance with this Order such that they continue to operate as intended without interruption.

5. Precipitation and drainage control facilities shall be designed with a minimum capacity to accommodate a 100-year, 24-hour storm event.

6. The site shall be protected from any washout or erosion of wastes from inundation, which could occur as a result of a l00-year, 24-hour storm event, or as the result of flooding with a return frequency of 100 years.

7. The landfill foundation and structures or devices for erosion control and water, leachate, and gas containment and monitoring shall be constructed and maintained to withstand conditions generated during the maximum probable earthquake.

8. Containment, collection, drainage, and monitoring systems for groundwater, surface water, and leachate shall be maintained and operated as long as waste or leachate is present and poses a threat to water quality.

9. The leachate discharge system shall be maintained and operated to minimize undue buildup of hydraulic head on the bottom of the landfill and ensure that accumulated fluid is being adequately removed from the landfill and appropriately contained and discharged.

10. Methane and other landfill gases shall be adequately vented, removed from the landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions and the impairment of beneficial uses of water due to gas migration.

11. Discharge of leachate and gas condensate is 1) limited to areas of the landfill that are equipped with a composite liner and a leachate collection system and 2) limited to the unit of the landfill from which derived except as otherwise approved by the Executive Officer. Leachate collected from unlined cells shall be discharged only to a portion of the landfill that meets condition 1) above and Specification B.12 or to the landfill's leachate treatment and storage facility.

12. Recirculation of leachate or gas condensate to a different cell or unit from where it was generated shall be allowed with an acceptable Operations, Monitoring, and Maintenance Plan approved by the Executive Officer. At a minimum, 1) the receiving cell or unit must have a composite liner and LCRS designed to federal (Subtitle D) municipal solid waste (MSW) and state Class II standards, 2) the leachate generation and buildup above the liner must be monitored separately for each receiving cell or unit and is limited to no more than 12 inches, and 3) recirculation may not occur under pressures exceeding gravity drainage.

13. Final and interim covers for the landfill shall be graded and maintained to promote lateral runoff of precipitation and prevent ponding or infiltration of water on or within the landfill.

14. The Discharger shall implement a Detection Monitoring Program (DMP), pursuant to Title 27, Section 20420. The DMP shall be designed to identify any water quality impacts from the landfill and demonstrate compliance with the Water Quality Protection Standard (WQPS), which is required pursuant to Title 27, Section 20390. The SMP attached to this Order is intended to constitute the DMP for the landfill.

15. The WQPS for the landfill, which is documented in the Discharger's report titled "Revised Site-Specific Monitoring and Reporting Program," shall include the following:

    (a) Constituents of Concern: Section 20395 of Title 27 defines Constituents of Concern (COCs) as "all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit." COCs for the Clover Flat Landfill include the monitoring parameters identified in the SMP attached to this Order, or any future amendment thereof, and all Appendix II parameters in the federal Subtitle D regulations.

    (b) Monitoring Parameters: Monitoring parameters (MPs), a subset of the COCs, are typically the most mobile and commonly detected COCs in groundwater at the site and are measured on a more frequent basis than the entire list of COCs. The MPs for the Clover Flat Landfill shall include, at a minimum, all constituents identified as such in the SMP attached to this Order, or any future amendments thereof. The Discharger may propose modification to the MPs as additional data become available concerning site-specific source characteristics and natural background water quality. However, modifications shall only be made upon written concurrence from the Executive Officer.

    (c) Concentration Limits: Concentration limits (CLs) for all COCs detected at the specified points of compliance shall be established using the background data set pursuant to Title 27, Section 20400. An upper prediction limit (UPL) shall be calculated from the background data set using statistical methods as appropriate.

    (d) Point of Compliance: Title 27 defines the Point of Compliance (POC) as the "vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit." The POC shall be the hydraulically downgradient perimeter of the waste fill area.

    (e) Monitoring Points: Title 27 defines Monitoring Points as "a well, device, or location specified in the waste discharge requirements at which monitoring is conducted and at which the water quality protection standard applies." Monitoring points for the landfill, which are located along the POC and at additional locations, are specified in the SMP attached to this Order, or any future amendments thereof.

16. Whenever there is "measurably significant" geochemical evidence of an exceedance of CLs (as defined in Title 27, Section 20164) or significant physical evidence of a release, the Discharger shall be prepared to implement an Evaluation Monitoring Program (EMP) pursuant to Title 27, Section 20425, at the direction of the Water Board. In such a case, the Discharger shall continue implementing the DMP as prescribed in any SMP attached to this Order. If required, the EMP shall be implemented to determine the nature and extent of any release detected by the DMP.

17. Future landfill cell liners shall be constructed consistent with the design and components specified below, from top to bottom. Alternative liner designs and/or components must be approved by the Executive Officer. Liner designs consistent with the following specifications will likely streamline the Water Board staff review and approval process.

Cell Base/Floors	**Cell Side Slopes & Benches**
18-inch (minimum) soil operations layer	2-foot (minimum) soil operations layer
Geotextile separator	
1-foot Gravel LCRS with 6-inch slotted pipe	
80-mil single-sided textured HDPE geomembrane, textured side down	80-mil single-sided textured HDPE geomembrane, textured side down
2-foot thick compacted clay liner	Geosynthetic clay liner (GCL)[1]
Geotextile separator	
Gravel blanket underdrain with 4-inch slotted pipe	Strip geonet underdrains
Prepared subgrade	Prepared subgrade

[1] For steep side slopes (1.5:1 or steeper), an engineered alternative sideslope design consisting of a noncomposite, 80-mil HDPE geomembrane may be acceptable if a composite side slope liner would be unstable. Alternative liner designs must comply with Title 27 regulations and State Board Resolution 93-63, and technical justification must be provided for engineered alternatives to the prescribed composite liner.

18. Nonhazardous solid waste shall only be discharged into composite-lined waste management units equipped with leachate collection and removal systems meeting Federal Municipal Solid Waste construction and design requirements specified in the Subtitle D regulations and meeting State Class III siting, construction, and design requirements specified in CCR Title 27, Section 20250 and specifications B.5 through B.17 of this Order.

19. The Discharger shall provide and maintain a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance periods. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

20. The Discharger shall notify the Water Board immediately of any failure occurring in the landfill. Any failure that threatens the integrity of containment or control features or structures at the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

21. When there are multiple landowners or lease holders involved, the Discharger shall provide reasonable access to any property it owns or leases at the site to allow for installation, sampling, monitoring, etc., of all devices and equipment necessary for compliance with the requirements of this Order.

22. All reports submitted pursuant to this Order shall be prepared under the supervision of and signed by appropriately licensed professionals, such as a California registered civil engineer, professional geologist, and/or certified engineering geologist.

C. PROVISIONS

1. Duty to Comply: The Discharger shall comply immediately, or as prescribed by the time schedule below, with all Prohibitions, Specifications and Provisions of this Order. All required submittals must be acceptable to the Executive Officer. The Discharger must also comply with all conditions of these WDRs. Violations may result in enforcement actions, including Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these WDRs by the Water Board. [CWC Section 13261, 13263, 13265, 13267, 13268, 13300, 13301, 13304, 13340, 13350].

2. Requests for Technical Reports: All technical and monitoring reports required pursuant to this Order are being requested pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to Section 13268 of the California Water Code.

3. Self-Monitoring Program: The Discharger shall comply with the SMP attached to this Order (Part A and Part B) and as may be amended by the Executive Officer. The attached SMP is intended to constitute a DMP pursuant to Title 27, Section 20420 and is designed to identify significant water quality impacts from the landfill and demonstrate compliance with the Water Quality Protection Standard (WQPS) established pursuant to Title 27, Section 20390. The attached SMP may be amended as necessary at the discretion of the Executive Officer.

   COMPLIANCE DATE: Immediate

4. Evaluation of Storm Water and Leachate Production and Storage Capacity: If requested by the Executive Officer, the Discharger shall submit a technical report evaluating the landfill's storage capacity needs for storm water and leachate in order to consistently manage storm water and leachate separately and without the need for periodic discharges of leachate (treated or untreated) to the storm water basin. The technical report shall also propose any necessary measures to meet the required storage capacity, such as construction of additional impoundments, reduction of leachate generation, etc. The evaluation should consider the past hydrograph for leachate and storm water production and should consider future production to at least a 100-year, 24-hour precipitation event.

COMPLIANCE DATE: To be determined

5. Report of Waste Discharge: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing any proposed material change in the character, location, or volume of a discharge, or in the event of a proposed change in use or development of the landfill [CWC Section 13260(c)]. The technical report shall describe the project, identify key changes to the design that may impact any portion of the landfill, and specify components of the design necessary to maintain integrity of the landfill cover and prevent water quality impacts. No material changes to any portion of the landfill shall be made without approval by the Executive Officer.

   COMPLIANCE DATE: 120 days prior to any material change

6. Financial Assurance for Post Closure Monitoring and Maintenance: The Discharger shall submit evidence of an Irrevocable Fund, acceptable to the Executive Officer, to ensure monitoring and maintenance of the landfill during the post-closure period. Every five years, for the duration of the post-closure monitoring period, the Discharger shall submit a report that includes an outline of the financial assurance mechanism and verification that the fund has been created. Fund value should be supported by calculations, to be included with this submittal, providing cost estimates for all post-closure monitoring, maintenance, repair and replacement of landfill containment, cover, and monitoring systems. The fund value should be based on the sum of these estimates. The cost estimates and funding should be updated to reflect change to monitoring systems as they occur. The post-closure maintenance period shall extend as long as the landfill wastes pose a threat to water quality, however for purposes of calculating cost estimates, a period of no less than 30 years may be used.

   COMPLIANCE DATE: October 1, 2011, then every five years thereafter

7. Financial Assurance for Corrective Action: The Discharger shall submit evidence of an Irrevocable Fund, acceptable to the Executive Officer, to ensure any corrective action and remediation actions that may be necessary as a result of current or future unforeseen releases from the landfill. Every five years, for the duration of the post-closure monitoring period, the Discharger shall submit a report that includes an outline of the financial assurance mechanism and verification that the fund has been created. Fund value should be supported by calculations, to be included with this submittal, providing cost estimates for all corrective action measures and remediation that may be required at the landfill. The fund value should be based on the sum of these estimates. The cost estimates and funding should be updated as necessary. The post-closure maintenance period shall extend as long as the landfill wastes pose a threat to water quality, however for purposes of calculating cost estimates, a period of no less than 30 years may be used.

   COMPLIANCE DATE: October 1, 2011, then every five years thereafter

8. Construction-Related Storm Water Control Plans: For each grading or development project outside of the permitted landfill footprint proposed greater than one acre in size, the Discharger shall submit a Notice of Intent to the State Board, submit a Storm Water

Pollution Prevention Plan acceptable to the Executive Officer, and implement Best Management Practices (BMPs) for the control of stormwater, in accordance with requirements specified in the State Board's General Permit for Storm Water Discharges Associated with Construction Activities (NPDES Permit No. CAS000002). The Discharger will be deemed in compliance with this provision if another party constructing improvements on property owned by the Discharger, pursuant to an easement granted by the Discharger, has obtained coverage under the General Permit.

COMPLIANCE DATE: 30 days prior to construction

9. Well Installation Report: The Discharger shall submit a technical report, acceptable to the Executive Officer, that provides well construction details, geologic boring logs, and well development logs for all new wells installed as part of the Discharge Monitoring Program (Attachment A).

   COMPLIANCE DATE: 60 days following completion of well installation

10. Earthquake Inspection: The Discharger shall submit a detailed Post Earthquake Inspection Report acceptable to the Executive Officer, in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater at or within 30 miles of the landfill. The report shall describe the containment features, groundwater monitoring, and control facilities potentially impacted by the static and seismic deformations of any waste management unit. Damage to any waste containment facility, which may impact State waters, must be reported immediately to the Executive Officer.

    COMPLIANCE DATE: Within 2 weeks of Earthquake

11. Availability: A copy of these WDRs shall be maintained by the Discharger and shall be made available by the Discharger to all employees or contractors performing work (maintenance, monitoring, repair, construction, etc.) at the landfill.

12. Change In Ownership: The Discharger must notify the Executive Officer in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the Discharger and the new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the Discharger and the new discharger. This agreement shall include an acknowledgment of which discharger is liable for violations up to the transfer date and which discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]

13. Revision: These waste discharge requirements are subject to review and revision by the Water Board. [CCR Section 13263]

14. Termination: Where the Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Water Board, it shall promptly submit such facts or information. [CWC Sections 13260 and 13267]

15. Vested Rights: This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the Discharger from liability under Federal, State or local laws, nor do they create a vested right for the Discharger to continue the waste discharge. [CWC Section 13263(g)]

16. Severability: Provisions of these WDRs are severable. If any provisions of these WDRs are found invalid, the remainder of these WDRs shall not be affected. [CWC 9213]

17. Operation and Maintenance: The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this order. [CWC Section 13263(f)]

18. Reporting of Hazardous Substance Release: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Discharger shall report such discharge to the Water Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00). A written report shall be filed with the Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

19. Entry and Inspection: The Discharger shall allow the Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

    a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this order;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
    d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this order or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]

20. Discharges To Navigable Waters: Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES

permit) must file an NPDES permit application with the Water Board. [CCR Title 2 Section 223571]

21. Endangerment of Health or the Environment: The Discharger shall report any event of noncompliance that may endanger health or the environment. Any such information shall be provided orally to the Executive Officer, or an authorized representative, within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission to the Water Board shall also be provided within five days of the time a Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

22. Document Distribution: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

    a. Water Board
    b. Napa County Department of Environmental Health (Local Enforcement Agency)

    The Executive Officer may modify this distribution list as needed.

23. Electronic Reporting Format: In addition to print submittals, all reports submitted pursuant to this Order must be submitted as electronic files in PDF format. The Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures & tables. Upon request by Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in **Microsoft Excel® or similar spreadsheet format**. This format facilitates data computations and/or plotting that Water Board staff may undertake during their review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public. All electronic files, whether in PDF or spreadsheet format, shall be submitted via the Water Board's file transfer protocol (FTP) site, email (only if the file size is less than 3 MB) or on CD. CD submittals may be included with the print report. Email notification should be provided to Water Board staff whenever a file is uploaded to the Water Board's FTP site.

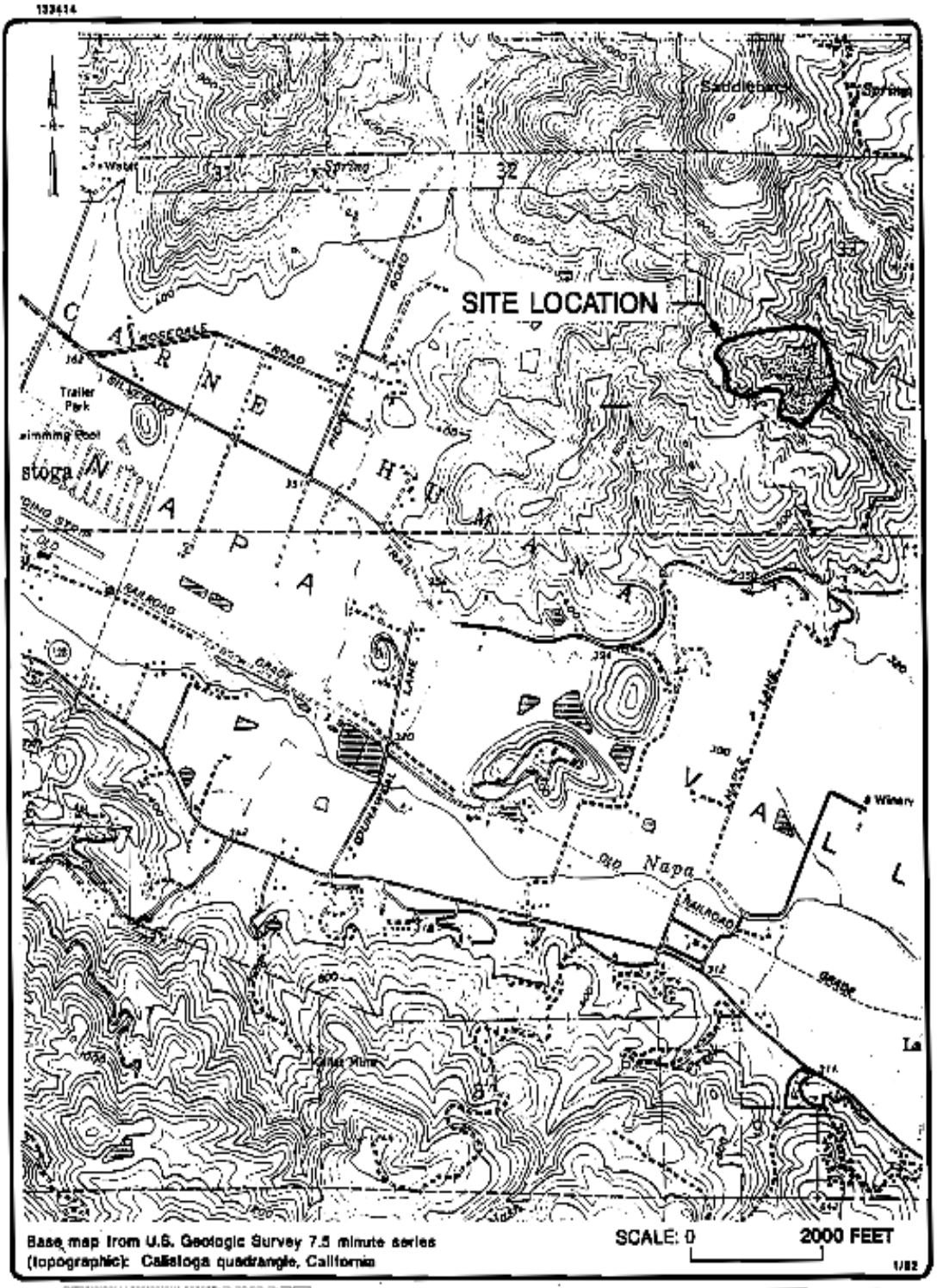
24. This Order supersedes and rescinds Order No. 91-160.

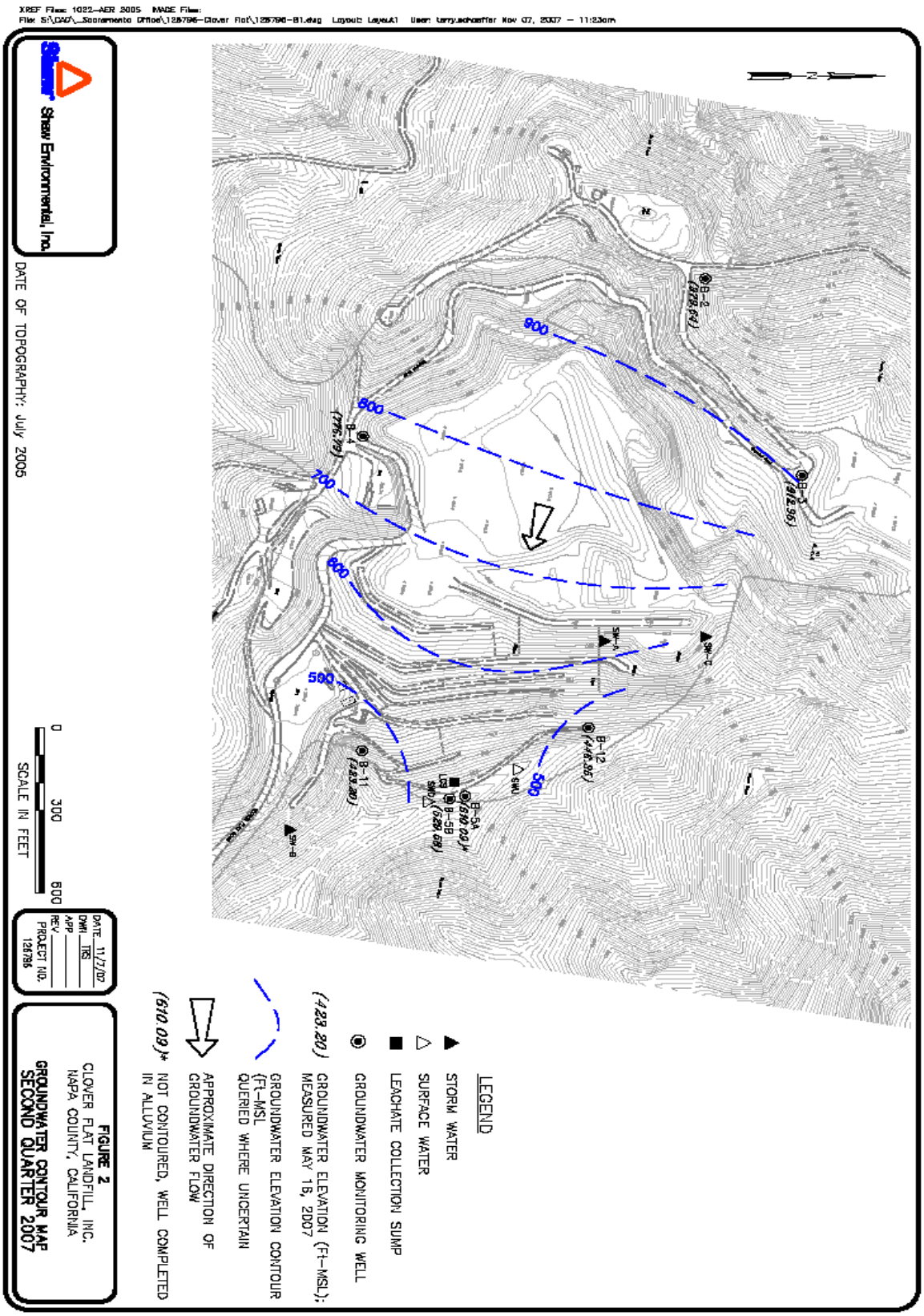
I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 14, 2008.

Digitally signed by Bruce Wolfe
Date: 2008.05.15 16:19:21 -07'00'

Bruce H. Wolfe
Executive Officer

Attachments:
Figure 1 - Vicinity Map
Figure 2 – Site Layout showing Groundwater, Leachate and Surface Water Monitoring Locations
Self Monitoring Program (Part A and Part B)


SITE LOCATION
Base map from U.S. Geologic Survey 7.5 minute series
(topographic): Calistoga quadrangle, California
SCALE: 0
2000 FEET
Shaw Environmental, Inc.
CLOVER FLAT LANDFILL, INC.
CLOVER FLAT LANDFILL
NAPA COUNTY, CALIFORNIA
SITE LOCATION MAP
FIGURE
1
PROJECT NO.
0331-001.15


LEGEND
STORM WATER
SURFACE WATER
LEACHATE COLLECTION SUMP
GROUNDWATER MONITORING WELL
(423.20) GROUNDWATER ELEVATION (Ft-MSL); MEASURED MAY 16, 2007
GROUNDWATER ELEVATION CONTOUR (Ft-MSL) QUERIED WHERE UNCERTAIN
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
(610.09)* NOT CONTOURED, WELL COMPLETED IN ALLUVIUM
SCALE IN FEET
0
300
600
DATE OF TOPOGRAPHY: July 2005
Shaw Environmental, Inc.
DATE 11/27/07
DWN TRS
APP
REV
PROJECT NO. 126795
FIGURE 2
CLOVER FLAT LANDFILL, INC.
NAPA COUNTY, CALIFORNIA
GROUNDWATER CONTOUR MAP
SECOND QUARTER 2007

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CLOVER FLAT LANDFILL, INC.,
VISTA CORPORATION

CLOVER FLAT LANDFILL,
CLASS III SOLID WASTE DISPOSAL SITE
CALISTOGA, NAPA COUNTY

ORDER No. R2-2008-0027

CONSISTS OF

PART A

AND

PART B

PART A

This self monitoring program (SMP) specifies monitoring and reporting requirements, including:

- General monitoring requirements for landfills and waste management units (Part A)
- Self monitoring report content and format (Part A)
- Self monitoring report submittal frequency and schedule (Part B)
- Monitoring locations and frequency (Part B)
- Monitoring parameters and analytes (Part B)

A. AUTHORITY AND PURPOSE

For discharges of waste to land, water quality monitoring is required pursuant to the California Code of Regulations, Division 2, Title 27, Subdivision 1, Chapter 3, Subchapter 3, Sections 20380 through 20435. The principal purposes of an SMP are: (1) to document compliance with waste discharge requirements and prohibitions established by the Water Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from the waste discharge, (3) to develop or assist in the development of effluent standards of performance, and toxicity standards, and (4) to assist the discharger in complying with the requirements of Title 27.

B. MONITORING REQUIREMENTS

Monitoring refers to the observation, inspection, measurement, and/or sampling of environmental media, waste management units (WMUs), containment and control facilities, and waste disposed in each WMU. The following defines the types of monitoring that may be required.

Monitoring of Environmental Media

The Water Board may require monitoring of groundwater, surface water, storm water, landfill gas and any other environmental media that may pose a threat to water quality or provide an indication of a water quality threat at the site.

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA-approved methods or in accordance with a sampling and analysis plan approved by Water Board staff. Analytical testing of environmental media required by this SMP shall be performed by a California State approved laboratory for the required analyses. The director of the laboratory whose name appears on the certification shall be responsible for supervise of all analytical work in his/her laboratory and shall have signing authority for all reports or may designate signing of all such work submitted to the Water Board.

All monitoring instruments and devices used to conduct monitoring in accordance with this SMP shall be maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once every two years.

Standard Observations

Standard observations refer to observations within the limits of each WMU, at their perimeter, and of the receiving waters beyond their limits. Standard observations include:

1. WMUs:

    a. Evidence of ponded water at any point on the WMU
    b. Evidence of odors, including their presence or absence, characterization, source, and distance of travel from source
    c. Evidence of erosion and/or daylighted waste

2. Perimeter of WMUs:

    a. Evidence of liquid leaving or entering the WMU, estimated size of affected area and flow rate (show affected area on map)
    b. Evidence of odors, including their presence or absence, characterization, source, and distance of travel from source
    c. Evidence of erosion and/or daylighted waste

3. Receiving Waters:

    a. Floating and suspended materials of waste origin: including their presence or absence, source, and size of affected area
    b. Discoloration and turbidity: description of color, source, and size of affected area
    c. Evidence of odors, presence or absence, characterization, source, and distance of travel form source
    d. Evidence of beneficial use: presence of water associated with wildlife
    e. Flow rate
    f. Weather conditions: wind direction and estimated velocity, total precipitation

Facilities Inspections

Facilities inspections refer to the inspection of all containment and control structures and devices associated with WMUs. Containment and control facilities may include the following:

1. Asphalt or earthen covers
2. Perimeter drainage or diversion channels
3. Detention ponds or collection tanks

C. REPORTING REQUIREMENTS

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Code and this Water Board's Resolution No.73-16 and Order No. 93-113. At a minimum, each Self Monitoring Report (SMR) shall include the following information:

1. Transmittal Letter: A cover letter transmitting the essential points shall be included with each monitoring report. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall also certify the completion of all monitoring requirements. The letter shall be signed by the Discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

2. Graphic Presentation: The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:

    a. Plan-view maps showing all monitoring and sampling locations, waste management units, containment and control structures, treatment facilities, surface water bodies, and site/property boundaries.
    b. Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing inferred groundwater gradients and flow directions under/around each waste management unit, based upon the past and present water level elevations and pertinent visual observations.
    c. Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this SMP.

3. Tabular Presentation: The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow quick and easy reference:

    a. Well designation
    b. Well location coordinates (latitude and longitude)
    c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation)
    d. Groundwater depths
    e. Groundwater elevations
    f. Current analytical results (including analytical method and detection limits for each constituent)
    g. Historical analytical results (including at least the past five years unless otherwise requested)
    h. Measurement dates

4. Compliance Evaluation Summary and Discussion:

    a. A summary and certification of completion of all environmental media monitoring, standard observations, and facilities inspections
    b. The quantity and types of wastes disposed of during the past quarter, and the locations of the disposal operations, if applicable.
    c. A description of the waste stream including the percentage of each waste type (e.g.,

residential, commercial, industrial, construction/demolition, etc.), if applicable

d. The signature of the laboratory director or his/her designee indicating that he/she has supervised all analytical work in his/her laboratory
e. Provide a discussion of the field and laboratory results that includes the following information:

(1) Data Interpretations
(2) Conclusions
(3) Recommendations
(4) Newly implemented or planned investigations & remedial measures
(5) Data anomalies
(6) Variations from protocols
(7) Condition of wells
(8) Effectiveness of leachate monitoring and control facilities.

5. Appendices: The following information shall be provided as appendices in electronic format only unless requested otherwise by Water Board staff and unless the information is already contained in a Sampling and Analysis Plan approved by Water Board staff.

a. New boring and well logs
b. Method and time of water level measurements
c. Purging methods and results including the type of pump used, pump placement in the well, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity, calibration of the field equipment, pH temperature, conductivity, and turbidity measurements, and method of disposing of the purge water
d. Sampling procedures, field and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations
e. Documentation of laboratory results, analytical methods, detection limits, and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

D. CONTINGENCY REPORTING

1. The Discharger shall report by telephone to the Water Board, any discharge from the disposal area immediately after it is discovered. The Discharger shall submit a written report with the Water Board within five days of discovery of any discharge. The written report shall contain the following information:

a. A map showing the location(s) of discharge
b. Approximate flow rate
c. Nature of effects (e.g., all pertinent observations and analyses)
d. Corrective measures underway or proposed

2. The Discharger shall submit a written report to the Water Board within seven days of determining that a statistically significant difference occurred between a self-monitoring sample set and an approved' Water Quality Protection Standard (WQPS). The written report

shall indicate what WQPS(s) have been exceeded. The Discharger shall resample at the compliance point(s) where this difference has been found within 30 days.

3. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between self-monitoring results and WQPS(s), the Discharger shall, upon determination by the Executive Officer, submit to the Water Board an amended Report of Waste Discharge as specified in Title 27, Section 20420 for establishment of an Evaluation Monitoring program meeting the requirements of Title 27, Section 20425.

E. ELECTRONIC REPORTING FORMAT

In addition to print submittals, all SMRs submitted pursuant to this SMP must be submitted as electronic files in **PDF format**. The Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures and tables. Upon request by Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in **Microsoft Excel® or similar spreadsheet format**. This format facilitates data computations and/or plotting that Water Board staff may undertake during their review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public review. All electronic files, whether in PDF or spreadsheet format, shall be submitted via the Water Board's file transfer protocol (FTP) site, email (only if the file size is less than 3 MB) or on CD. CD submittals may be included with the print report. Email notification should be provided to Water Board staff whenever a file is uploaded to the Water Board's FTP site.

F. MAINTENANCE OF WRITTEN RECORDS

The Discharger shall maintain information required pursuant to this SMP for at least five years. The five-year period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Water Board.

PART B

A. MONITORING LOCATIONS AND FREQUENCY

Monitoring locations, frequencies, parameters, and analytes are specified in Tables B-1, B2, and B-3 of this SMP and as indicated below. Monitoring locations are shown in Figures B-1 and B-2.

1. **Environmental Media**

   a. Groundwater:

      Groundwater shall be monitored at the locations specified in Table B-1 and shown in Figure B-1. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.

   b. Leachate:

      Leachate shall be monitored at the locations specified in Table B-1 and shown in Figure B-1. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.

   c. Stormwater:

      Stormwater shall be monitored at the locations specified in Table B-1 and shown in Figure B-1. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.

2. **Standard Observations**

   Standard observations shall be made within the limits of each landfill cell, at their perimeter, and of the water courses and receiving waters beyond their limits. Standard observations shall be conducted at the locations and frequency specified in Table B-2.

3. **Facilities Inspections**

   The Discharger shall inspect all containment and control structures and devices associated with each landfill cell and the landfill as a whole to ensure proper and safe operation. Facility inspections shall be conducted at the locations and frequencies specified in Table B-3.

B. REPORTING SCHEDULE

The Discharger shall submit SMRs to Water Board staff in accordance with the schedule indicated in Table B-4. Reports due at the same time maybe combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable.

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Water Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Water Board's Order No. R2-2008-0027,

2. Is effective on the date shown below,

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Date Ordered: May 14, 2008

Attachments: SMP Tables B-1, B-2, B-3, & B-4
SMP Figure B-1

Table B-1
Clover Flat Landfill, Self Monitoring Program (SMP) for Order No. R2-2008-0027

	Groundwater							Leachate		Surface Water	
Parameters (Method)	B-2	B-3	B-4	B-5A	B-5B	B-11	B-12	LCS	LEW-2	SWU	SWD
Date Installed	6/25/1988	7/6/1988	7/7/1988	6/24/1988	7/12/1988	8/21/1990	8/29/1990				
Total Depth (ft bgs)	120 ft	170 ft	130 ft	25 ft	225 ft	294.6 ft	401 ft				
Screen Interval (ft bgs)	99 to 119	149 to 169	107 to 127	4 to 14	64 to 84	273.3 to 293.3	301.5 to 321.5				
Field Measurements											
Water Elevation	Q	Q	Q	Q	Q	Q	Q	Q	Q		
Electrical Conductivity	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	Q	Q	SA-1,3	SA-1,3	Q (1)	Q (1)
pH	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	Q	Q	SA-1,3	SA-1,3	Q (1)	Q (1)
Temperature	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	Q	Q	SA-1,3	SA-1,3	Q (1)	Q (1)
Turbidity	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3				
Settleable Solids	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3				
Laboratory Analyses											
Total Dissolved Solids (8260)	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3			Q (1)	Q (1)
Chloride (300.0)	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3			Q (1)	Q (1)
Sulfate (EPA 8260)	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3			Q (1)	Q (1)
Nitrate + Nitrite as Nitrogen (EPA 8260)	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3			Q (1)	Q (1)
VOCs (EPA 8260)	SA-1,3	SA-1,3	SA-1,3	SA-1,3	SA-1,3	Q	Q	SA-1,3	SA-1,3	Q (1)	Q (1)
Constituents of Concerns (COCs) (2)	5-year	5-year	5-year	5-year	5-year	5-year	5-year				

(1) To be sampled each quarter if enough water is available for sample collection.

(2) Next 5-year Constituents of Concern sampling event will occur during third quarter of 2011.

Q = quarterly monitoirng according to the following schedule:

1st quarter = Jan thru Mar

2nd quarter = Apr thru Jun

3rd quarter = Jul thur Sep

4th quarter = Oct thru Dec

SA-1,3 = Semi-annual monitoring during first and third quarters

VOCs = volatile organic compounds by EPA Method 8260

Table B-2 Standard Observations

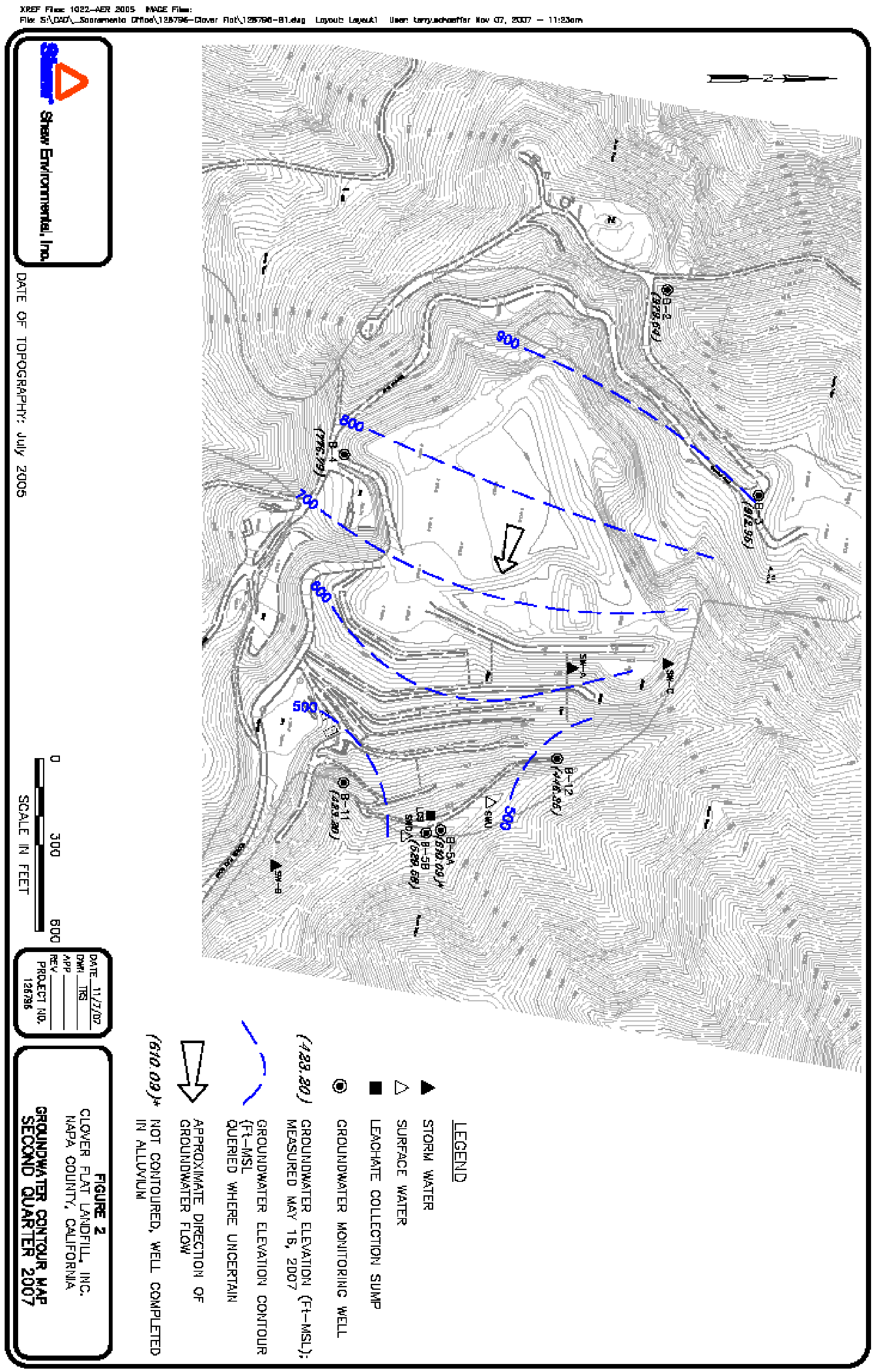
Station	Frequency
WMUs	Weekly
WMU Perimeter	Weekly
Receiving Waters	Weekly

Table B-3 Facilities Inspections

Containment and Control Facility	Frequency
Leachate Collection and Removal Systems (LCRS)	Quarterly
Storm Water Impoundment (Sedimentation Pond)	Quarterly
Vadose Zone and Subdrain Collection System	Quarterly
Perimeter diversion Channels	Quarterly
Leachate Management facilities and secondary containment (Leachate Storage Impoundments, piping, treatment facilities, etc.)	Quarterly

Table B-4 Reports and Due Dates

Report Type	Reporting Frequency	Report Due Dates
Environmental Media Monitoring (Groundwater, Leachate, Storm Water, Landfill Gas)	Semi-Annual	**April 30, October 31**
Standard Observations & Facilities Inspections	Semi-Annual	**April 30, October 31**


Shaw Environmental, Inc.
DATE OF TOPOGRAPHY: July 2005
SCALE IN FEET
0
300
600
900
800
700
600
500
500
B-2
B-3
B-4
B-11
B-12
B-5A
B-5B
LEGEND
STORM WATER
SURFACE WATER
LEACHATE COLLECTION SUMP
GROUNDWATER MONITORING WELL
(423.20) GROUNDWATER ELEVATION (Ft-MSL); MEASURED MAY 16, 2007
GROUNDWATER ELEVATION CONTOUR (Ft-MSL) QUERIED WHERE UNCERTAIN
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
(610.09)* NOT CONTOURED, WELL COMPLETED IN ALLUVIUM
DATE 11/7/07
DWN TRS
APP
REV
PROJECT NO. 126796
FIGURE 2
CLOVER FLAT LANDFILL, INC.
NAPA COUNTY, CALIFORNIA
GROUNDWATER CONTOUR MAP
SECOND QUARTER 2007